

# SEQUENCE LISTING

<110> AKKO Nobel N.V.

<120> Babesia canis vaccine

<130> Bccvirvaccine

<140>

<141>

<160> 10

<170> PatentIn Ver. 2.1

<210> 1

<211> 1135

<212> DNA

<213> Babesia canis

<220>

<221> CDS

<222> (75)..(500)

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Met Glu Ser Thr Ser Thr Thr Thr Asn Phe Val Ala  
1 5 10

tac aac cgt ccc acc ttt ggt gag acg ttt gat gtg atg agg gaa gct 158  
Glu Asn Arg Pro Thr Phe Gly Glu Thr Phe Asp Val Met Arg Glu Ala  
15 20 25

gag cgt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt 200  
Glu Leu Arg Val Lys Ser Ser His Arg Leu Ala Met Leu Arg Ala Leu  
1 1

gca gga atg tgc ggt cac cgc atc att cct ggc act agt gct tct gcc 254  
Ala Gly Met Cys Gly His Arg Val Leu Pro Gly Thr Gly Ala Ser Ala  
45 50 55 60

gag cgt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt ggt 300  
Glu Leu Arg Val Lys Ser Ser His Arg Leu Ala Met Leu Arg Ala Leu  
1 1

Pro Arg Pro Gln Ser Thr Lys Ser Pro Glu Leu Arg Glu Leu Ser Arg  
80 85 90

aag att cgc gaa atg aat aag aat ata agt cag gaa tca gtt cgg gta 398  
Lys Ile Arg Glu Met Asn Lys Thr Ile Ser Gln Glu Ser Ala Arg Val  
95 100 105

aac cac cgg ttg cgg gaa ggc cac cct ctc tta gag aag cgg gca gaa 446  
Asn His Arg Leu Pro Glu Gly His Pro Leu Leu Glu Lys Arg Ala Glu  
110 115 120

tat ttt cgt cac ctt aga tct ctt aag agc caa gga gtc aat aga ctc 494  
Tyr Phe Arg His Leu Arg Ser Leu Lys Ser Gln Gly Val Asn Arg Leu  
125 130 135 140

atc taa gaaggcaata cgtaggtacc gtgcctctat gaggaataac aaccgactag 550  
Ile

tgcacaatag acgaccagtt ctaccaaagg tagagcctga ctctaatacta ccattccggcc 610

agcgacggag tcgcatgaca acgtggaatc ttagaccacg ccggacgggt tatccgtcaa 670

atgggtacttt ggcagttacg gaactcctga tctcgattta tagatcaaac ttctacacct 730

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tcgtagaata ctgcataaac aggatatgcg tcgaggcaacg cctcacccga ctacgtccga 910

gggtgacoot aacgggtgc tgaactaggt tcagccagcg cttcctgtga gtatgtcatt 970

cgggtctctt cggggcccg ggcagtttcc actggtgtag gtttgcccta ctgagtagct 1030

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<210> C

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<212> PRT

<213> PRT 14 = 100%

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50 55 60

Val Thr Pro Lys Gly Ala Ser Met Lys Leu Lys Pro Pro Arg Pro Gln  
65 70 75 80

Ser Thr Lys Ser Pro Glu Leu Arg Glu Leu Ser Arg Lys Ile Arg Glu  
85 90 95

Met Asn Lys Thr Ile Ser Gln Glu Ser Ala Arg Val Asn His Arg Leu  
100 105 110

Pro Glu Gly His Pro Leu Leu Glu Lys Arg Ala Glu Tyr Phe Arg His  
115 120 125

Leu Arg Ser Leu Lys Ser Gln Gly Val Asn Arg Leu Ile  
130 135 140

- 210 • 3
- 211 • 1134
- 212 • DNA
- 213 • *Batesia canis*

6220  
 6221 CDS  
 6222 (75) .. (929)

Met Glu Ser Thr Ser Thr Thr Thr Asn Phe Val Ala

[illegible]

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 Ala Gly Met Cys Gly His Arg Val Leu Pro Gly Thr Gly Ala Ser Ala  
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ata gca gca acg gta acc cca aag ggg gct tct atg aag ctt aaa cca 302  
 Ile Ala Ala Thr Val Thr Pro Lys Gly Ala Ser Met Lys Leu Lys Pro  
 65 70 75

ccg cgt ccg caa tca acg aag tct ccg gag ctc agg gag ctg tca cgg 350  
 Pro Arg Pro Gln Ser Thr Lys Ser Pro Glu Leu Arg Glu Leu Ser Arg  
 80 85 90

aag att cgc gaa atg aat aag act ata agt cag gaa tca gct cgg gta 398  
 Lys Ile Arg Glu Met Asn Lys Thr Ile Ser Gln Glu Ser Ala Arg Val  
 95 100 105

aac cac cgg ttg ccg gaa ggc cac cct ctc tta gag aag cgg gca gaa 446  
 Asn His Arg Leu Pro Glu Gly His Pro Leu Leu Glu Lys Arg Ala Glu  
 110 115 120

tat ttc gtc acc tta gat ctc tta aga gcc aag gag tca ata gac tca 494  
 Tyr Phe Val Thr Leu Asp Leu Leu Arg Ala Lys Glu Ser Ile Asp Ser  
 125 130 135 140

tct aag aag gca cta cgt agg tac cgt gcc tct atg agg aat acg aac 542  
 Ser Lys Lys Ala Leu Arg Arg Tyr Arg Ala Ser Met Arg Asn Thr Asn  
 145 150 155

cga cta gtg cac aat aga cga cca gtt cta cca aag gta gag cct gac 590  
 Arg Leu Val His Asn Arg Arg Pro Val Leu Pro Lys Val Glu Pro Asp  
 160 165 170

tca atg cta cca tta ggc caa gaa cga act cgc atg aca acc tga aat 638  
 Ser Asn Leu Pro Phe Gly His Ala Arg Pro Arg Met Ile Thr Thr Asn  
 175 180 185

att aca cca cca cca gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa gaa 686  
 Leu Arg Pro Arg Arg Thr Gly Tyr Pro Ser Asn Gly Thr Leu Ala Val  
 190 195 200

att gaa cca cca cca cca cca cca cca cca cca cca cca cca cca cca 734  
 Ser Arg Pro Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg  
 205 210 215 220 225 230 235 240 245 250

225

230

235

ggt ttg cta ctc cta tcc ggt tac ctc caa cta tat cgt gca ctg cac 820  
 Ala Leu Leu Leu Ser Gly Tyr Leu Gln Leu Tyr Arg Ala Leu His  
 240 245 250

tca gtt gga agg tct gta ttc gta gaa tac tgc aaa acc agg ata tgc 878  
 Ser Val Gly Arg Ser Val Phe Val Glu Tyr Cys Lys Thr Arg Ile Cys  
 255 260 265

gtc gag gaa cgc ctc acc gga cta cgt ccg agg gtg acc cta acc ggc 926  
 Val Glu Ala Arg Leu Thr Gly Leu Arg Pro Arg Val Thr Leu Thr Gly  
 270 275 280

tgc tgaataggt tcagccagcg ctctctgtga gtatgtcatt cagggtcctt 979  
 Cys  
 285

cggggcccg gccagtttgg actggtgtag gtttgccta ctagagtact tgcgacgccg 1039

aagcgccctc gttcaaaaaga argcgcaagc cctagcagag aaatgcgagg gcattgactct 1099

tgaagtcaaa aaaaaaaaaa aaaaaaaaaa tcgag 1134

<210> 4

<211> 285

<212> PPT

<213> Babesia canis

<400> 4

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Thr Phe Gly Glu Thr Phe Asp Val Met Arg Glu Ala Leu Leu Arg Val  
 20 25 30 35 40

Iys Ser Ser Glu Arg Leu Ala Met Leu Arg Ala Leu Ala Glu Met Cys  
 45 50 55 60 65

Gly His Arg Val Leu Pro Gly Thr Gly Ala Ser Ala Ile Ala Ala Thr  
 70 75 80 85 90

Met Arg Val Leu Ala Pro Met Tyr Leu Iys Pro Pro Arg Pro Gln

Met Asn Lys Thr Ile Ser Gln Glu Ser Ala Arg Val Asn His Arg Leu  
100 105 110

Pro Glu Gly His Pro Leu Leu Glu Lys Arg Ala Glu Tyr Phe Val Thr  
115 120 125

Leu Asp Leu Leu Arg Ala Lys Glu Ser Ile Asp Ser Ser Lys Lys Ala  
130 135 140

Leu Arg Arg Tyr Arg Ala Ser Met Arg Asn Thr Asn Arg Leu Val His  
145 150 155 160

Asn Arg Arg Pro Val Leu Pro Lys Val Glu Pro Asp Ser Asn Leu Pro  
165 170 175

Phe Gly Gln Arg Arg Ser Arg Met Thr Thr Trp Asn Leu Arg Pro Arg  
180 185 190

Arg Thr Gly Tyr Pro Ser Asn Gly Thr Leu Ala Val Thr Glu Leu Leu  
195 200 205

Ile Ser Ile Tyr Arg Ser Asn Phe Tyr Thr Leu Lys Val Val Glu Glu  
210 215 220

Gly Arg Cys Thr Cys Cys Asn Thr His Lys Glu Gln Ala Leu Leu Leu  
225 230 235 240

Leu Ser Gly Tyr Leu Gln Leu Tyr Arg Ala Leu His Ser Val Gly Arg  
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Ser Val Phe Val Glu Tyr Cys Lys Thr Arg Ile Cys Val Glu Ala Arg  
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Leu Thr Gly Leu Arg Pro Arg Val Thr Leu Thr Gly Cys

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<213> Badly damaged

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211 24  
212 DNA  
213 Babesia canis  
  
400 6  
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24

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211 21  
212 DNA  
213 Babesia canis  
  
400 7  
atgacacatac tcacaggaag c

21

210 8  
211 20  
212 DNA  
213 Babesia canis  
  
400 8  
atgagtctat tgactccttg

20

210 9  
211 21  
212 DNA  
213 Babesia canis  
  
400 9  
tttgaattt ttgattttttt

21

210 1  
211 21  
212 DNA  
213 Babesia canis  
  
400 1

21